



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,205	10/27/2003	Anthony Paul Kitson	58575-281090	3847

7590 08/10/2004

Paul W. Busse
Faegre & Benson, LLP
2200 Wells Fargo Center
90 South Seventh Street
Minneapolis, MN 55401-3901

EXAMINER

THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,205	KITSON ET AL.	
	Examiner	Art Unit	
	Yvette C. Thornton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11, 13, 14 and 16-36 is/are rejected.
- 7) ☒ Claim(s) 8-10, 12 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is written in reference to application number 10/694205 filed on October 27, 2003 which is a continuation of application number 09/948182 filed on September 7, 2001, now US Patent 6,673,514.

NOTICE

1. Claims 1-36 use the terms "heat-labile moiety" and "acid generating moiety".

The specification establishes that dotted bond in the claimed formula I is a bond for the attachment to a parent compound or polymer where applicable or desired, but the heat labile moiety may be a freestanding compound (spec. pg. 6. p. 0019). The examiner has interpreted this as meaning that the heat-labile moiety can be a substituent or a freestanding compound. The examiner has applied this definition to the "acid generating moiety" as well.

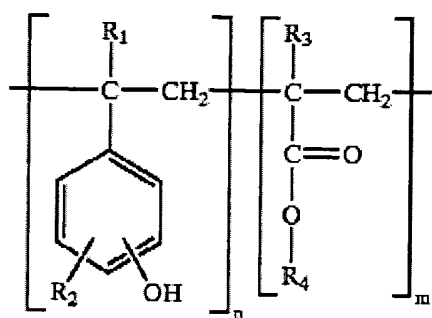
Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 11, 13-14 and 17-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitson et al. (US 6423456 B1). Kitson teaches a composition used as a resist, which is rendered soluble in a developer by patternwise delivery of heat. The said resist comprises a polymer of general formula (I):



wherein R1-3 is a hydrogen or alkyl group, and

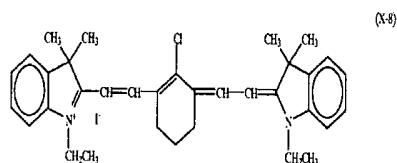
R4 is hydroxyalkyl group (abstract). The said polymer may be used alone or in combination with one or more polymeric substances such as novolac and poly(4-hydroxystyrene) (c. 6, l. 25-34). The taught composition further comprises a compound, which reduces the aqueous developer solubility of the polymeric substance (i.e., reversible insolubilizer compound) (c. 1, l. 59-c.2, l. 29). A useful class of reversible insolubilizer compounds is nitrogen containing compounds wherein at least one nitrogen atom is either quarternised or incorporated in a heterocyclic ring or both. Examples include CRYSTAL VIOLET and ETHYL VIOLET (c. 6, l. 40-49). In order to increase the sensitivity of the heat sensitive composition, it is beneficial to include an additional component, namely a radiation absorbing compound, which is capable of absorbing incident radiation and converting it to heat. The radiation absorbing compound is suitably a dye or pigment (c. 3, l. 25-31). Preferably the infrared absorbing compound is one whose absorption spectrum is significant at the wavelength output of the laser, which is to be used in the taught method (c. 8, l. 15-c. 9, l. 30). The composition may contain other ingredients such as stabilizing additives, surfactants, inert colorants and plasticizers Kitson teaches that the taught heat sensitive compositions do not comprise UV sensitive components such as NQD

moieties or onium salts (c. 10, l. 45-55). The given examples teach a process wherein the taught composition are coated on a copper substrate, exposed and developed. The formed precursor was then etched to form a printed circuit board sample having a copper pattern remaining that was an accurate copy of the precursor after the development stages (c. 12, l. 59-c. 13, l. 45). It is the examiner's position that the taught reversible insolubilizing compounds meet the limitation of a heat labile moiety as set forth in the instant claims.

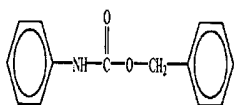
4. The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

5. Claims 1-2, 11, 13-14, 17-20, 22-25, 27-29, and 31-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Takata et al. (US 6143471 A). Takata teaches a photosensitive composition which comprises a support and a recording layer provided thereon containing at least one polymer, which is soluble in an alkaline developer, a near infrared absorbing dye, and a compound, which lowers solubility of the said polymer (abstract). Example 18 exemplifies a photosensitive solution prepared by the coating a composition comprising m-Cresol novolak resin as the polymer; a near infrared absorption compound X-8 having the structure:

Art Unit: 1752



; and a carbamate compound V-2 having the structure:



on an aluminum plate. The coated plate was exposed with a semiconductor laser and developed to form a lithographic printing plate. The plate was mounted on an offset printing press and printing was carried out up to 150,000 sheets (c. 42, l. 57-c. 43, l. 57). It is the examiner's position that compound V-2 meets the limitations of instant claim 2 wherein X of claimed formula (I)=NH-phenyl, which is a substituted imino group and R=CH₂-phenyl, which is an arylalkyl group.

6. Claims 1-7, 13-14, 16-20, 22-25, 27-29 and 31-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Gries et al. (US 2002/0009671 A1). Gries teaches a positive working IR sensitive mixture that contains a binder, which is insoluble in water but soluble in aqueous alkaline and carbon black particles, dispersed in such a binder (p. 0010). The taught invention further relates to a recording material having a substrate a positive working, IR sensitive layer comprising the said mixture. In particular, no UV/VIS sensitive components need to be present (p. 0015). The radiation sensitive layer may contain minor or customary amounts of further additives generally customary in such layers. Examples include dyes and surfactants (p. 0023). Example 7 exemplifies a coating dispersion prepared from 34 pbw carbon black dispersion comprising 66 pbw cresol/xylene/fomaldehyde novolak

Art Unit: 1752

and 5 pbw carbon black (p. 0069-0071); and 6.70 pbw poly(4-hydroxystyrene) in which 30% of the hydroxyl groups had been converted into tert-butoxycarbonyloxy groups and 15% 2,3-dihydroxypropoxy groups. The said coating dispersion was then applied to an aluminum substrate and dried. After the recording with IR radiation, the recording material was developed to produce a printing plate having a 60-line screen (p. 0102-0114). It is the examiner's position that the said poly(4-hydroxystyrene) in which 30% of the hydroxyl groups had been converted into tert-butoxycarbonyloxy groups meets the limitation of the instant claims wherein the hydroxyl group containing polymer has a pendent heat labile group. The examiner is also of the position that carbon black meets the limitation of an IR absorbing compound.

Claim Rejections - 35 USC § 103

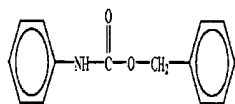
7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takata et al. (US 6143471 A) as applied to claims 1-2, 11, 13-14, 17-20, 22-25, 27-29 and 31-36 above. Takata, as discussed above, teaches a photosensitive composition which comprises a support and a recording layer provided thereon containing at least one polymer, which is soluble in an alkaline developer, a

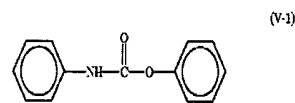
Art Unit: 1752

near infrared absorbing dye, and a compound, which lowers solubility of the said polymer (abstract). Example 18 exemplifies a carbamate compound V-2 having the



structure:

. Takata however fails to exemplify a compound wherein the claimed R substituent is a phenyl group as set forth in instant claim 3. Takata



(V-1)

does disclosure compound (V-1), which has the structure, (c.

16, l. 10-14). Compound V-1 meets the limitations of the instant claims wherein X=NH-phenyl and R=phenyl. One of ordinary skill in the art would have been motivated by the teachings of Takata to use any of the taught carbamate compounds in a composition such as that exemplified in example 18 to produce a lithographic printing plate.

Takata also fails to exemplify a composition further comprising a dye or dye moiety as set forth in instant claims 21 and 30. Takata teaches that a commercially available dye or pigment having a local maximum absorption at the wavelength of 700-1200nm can be used combination with the taught infrared absorption dyes of formula (X) (c. 31, l. 23-c. 32, l. 18). One of ordinary skill in the art would have been motivated by the teachings of Takata to incorporate a commercially available dye or pigment into the exemplified composition of example 18.

9. Claims 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gries et al. (US 2002/0009671 A1) as applied to claims 1-7, 13-14, 16-20, 22-25, 27-29 and 31-36. Gries, as discussed above, teaches all the limitations of the

instant claims except the addition of a colorant into the exemplified composition.

Gries however does teach that the radiation sensitive layer may also contain minor or customary amounts of further additives generally used in such layers such as dyes and surfactants (p. 0023). One of ordinary skill in the art would have been motivated by the teachings of Gries to incorporate a dye into the exemplified composition of Gries, as it is customary and well-known in the art.

Allowable Subject Matter

10. Claims 8-10, 12, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: review of the prior art failed to teach and/or suggest a heat labile moiety, which is part of the backbone of a hydroxyl group containing polymer.


Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday 8-6:30.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1752

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Yvette Clarke Thornton
Primary Examiner
Art Unit 1752

yct
August 6, 2004